D H E C PROMOTE PROTECT PROSPER	Mining Form MR-500	S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL BUREAU OF LAND AND WASTE MANAGEMENT DIVISION OF MINING AND SOLID WASTE MANAGEMENT 2600 Bull Street, Columbia, SC 29201 Telephone Number(803) 869-4261 Fax Number: (803) 896-4001

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF LAND AND WASTE MANAGEMENT
DIVISION OF MINING AND SOLID WASTE MANAGEMENT
2600 Bull Street; Columbia, SC 29201
Telephone Number (803) 896-4261 Fax Number (803) 896-4001

RECLAMATION PLAN

FORM MR-500 DATE VERSION ADOPTED: 7/1/94

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As required in Section 48-20-90 of the South Carolina Mining Act, "An operator shall submit with his application for an operating permit a proposed reclamation plan. The reclamation plan for an operating permit only must be furnished to the local soil and water conservation district in which the mining operation is to be conducted. The plan must include as a minimum each of the elements specified in the definition of 'reclamation plan' in Section 48-20-40 and information required by the department. The reclamation plan must provide that reclamation activities, particularly those relating to control of erosion, to the extent feasible, must be conducted simultaneously with mining operations and be initiated at the earliest practicable time after completion or termination of mining on a segment of the permitted land. The plan must provide that reclamation activities must be completed within two years after completion or termination of mining on each segment of the area for which an operation permit is requested unless a longer period specifically is permitted by the department."

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I. APPLICANT INFORMATION

1. Name of Company: Vulcan Construction Materials, LLC

2. Name of Proposed Mine: Lexington Quarry County: Lexington

3. Home Office Address: 201 Brown Road (Street **and** P.O. Box) — (864) 299-4785 (Telephone No.)

Piedmont (City) SC (State) 29673-8513 (Zip Code) — (864) 299-0610 (Fax. No.)

4. Local Office Address: Same (Street **and** P.O. Box) — Same (Telephone No.)

(City) (State) (Zip Code) — Same (Fax. No.)

5. Designate to which office Official Mail is to be sent:

Home Office: x Local Office:

6. Name of company personnel and their title to be the contact for official business and correspondence: John R. Aultman, PE - Manager of Environmental Services

II. ENVIRONMENTAL PROTECTION

1. Describe practices to protect adjacent resources such as roads, wildlife areas, woodland, cropland and others during mining and reclamation.

The mine permit area is located in a rural setting with land cover consisting of hardwood and managed pine forests for timber products and agricultural areas interspersed with rural residential homes. Of the 553.2 acres of permitted land, 186 acres will be undisturbed buffer with an additional 35 acres of setback with berm to provide additional protections to adjacent properties, creeks and other sensitive areas. The nearest public roads are Windmill Road, Old Fields Road and Stutman Road. A petition has been filed to close Stutman Road pending completion of the legal process prescribed for road closures. Based on a survey, there are no threatened and/or endangered species or sensitive habitats on-site that would be potentially affected by mining and reclamation (SynTerra's *Protected Species Assessment, September 2015* report attached). Wetlands on-site will be avoided first, and where direct impacts to wetlands are unavoidable, the impacts will be minimized to the degree practical. Wetlands or waters of the U.S. directly impacted will be permitted through the U.S. Army Corps of Engineers' 404 permit process. Additionally, a 401 Water Quality Certification will be obtained from DHEC to certify that water quality will not be adversely impacted due to loss of jurisdictional waters of the US.

2. Describe proposed methods to limit significant adverse effects on adjacent surface water and groundwater resources.

Proper reclamation of the mine site will include stabilizing all overburden storage piles with vegetation, removal of mine equipment, both mobile and stationary, immediate clean up of stained or impacted soils from operations or spillage, and removal of scrap material. Setbacks and established buffers along stream banks and soil stabilization will provide protection to surface water resources during and after mining. Due to the geology, groundwater resources will not be impacted offsite, and there will be minimal drawn down from dewatering in the pit. Once mining is terminated, groundwater levels will rebound to approximate original levels. The mining process will not use chemicals in the mining or processing of crushed stone; consequently, there is no potential for chemical contamination to groundwater resources. Coagulants may be used to assist in removing suspended solids, but must be approved by DHEC prior to use.

3. Describe proposed methods to limit significant adverse effects on known significant cultural or historic sites within the proposed permitted area.

A cultural and historic resources survey of the proposed mine permit area was conducted by Brockington and Associates to determine if any such resources would be adversely affected by the proposed mining operation. In Brockington's report, *Cultural Resources Survey of the Lexington Quarry Project, September 2015,* eight archaeological sites, one cemetery and five isolated finds with artifact scatter were located within the proposed mine permit area. One site (*38LX654 - Home Site*) is recommended eligible for listing in the National Registry of Historic Places (NRHP). A second site (*38LX652 - Black/Hite Family Cemetery*) is recommend for protection but, does not meet eligibility criteria for listing in NRHP. Vulcan will not disturb either site and will maintain a minimum 50 foot undisturbed buffer for additional protection.

4. Describe method to prevent or eliminate conditions that could be hazardous to animal or fish life in or adjacent to the permitted area.

Reclamation of the mine site will include stabilizing all overburden storage piles with vegetation, removal of mine equipment, both mobile and stationary, and removal of scrap material. Setbacks and established buffers along stream banks and soil stabilization will provide protection to fisheries in nearby streams. Establishing 3:1 slopes in the overburden along the edge of the pit and overburden storage areas and establishing fencing around the pit where exposed highwalls will be present will remove potentially unsafe conditions for persons and the indigenous animal populations. Leaks or spills of regulated substances such as petroleum products used in mobile and other mining equipment will be cleaned up immediately during the routine course of mining operations. Any stained or otherwise impacted soils will likewise be immediately cleaned up during the routine operations.

5. Describe how applicant will comply with State air quality and water quality standards as established by the S.C. Department of Health and Environmental Control.

To operate the quarry and processing plant, the applicant will complete the application process to obtain an Air Quality Construction Permit and ultimately an Air Quality Operating Permit.

With the termination of mining, all mobile mine equipment and processing plant equipment will be removed from site. Once the processing plant equipment is removed from the quarry site, the Air Quality Operating Permit will be terminated. Stone stockpiles, fines and barren soils, potential sources of dust after mining, will either be removed (stone stockpiles) or stabilized with vegetation to eliminate windblown dust.

Water quality will be maintained through the design, construction, operation and maintenance of process and stormwater retention ponds with discrete permitted outfalls permitted by DHEC which will establish specific water quality discharge limitations that must be maintained throughout the life of the operation.

III. RECLAMATION OF AFFECTED AREA

6. State useful purpose(s) the affected land is being proposed to be reclaimed to. More than one purpose may be checked, but information should be submitted to support the feasibility for each proposed purpose.

a. Lake or pond ___x_____	**f. Grassland** _____x_____
b. Agriculture_____	**g. Recreation**_____
c. Woodlands _____x_____	**h. Wetlands**_____
d. Residential_____	**i. Park**_____
e. Commercial_____	**j. Other**_____

7. State the final maximum surface gradient(s) (slope) in soil, sand, or other unconsolidated materials on reclaimed land. Surface gradients steeper than 3H:1V (18 degrees or 33 percent) may be required to submit geotechnical data and studies to demonstrate that the steeper slopes will remain stable following final reclamation.

The final maximum surface gradient for slopes in overburden storage areas and slopes in overburden in the pit will be 3:1 .

8. How will the final slopes in unconsolidated material be accomplished? If the slope will be by backfilling, demonstrate that there is adequate material to accomplish the stated final gradient. If gradient is to be achieved by bring in material from outside the permitted area, state the nature of the material and approximate quantities. If the gradient is to be achieved by grading, show that there is adequate area for grading to achieve gradient (ie. adequate distance between the property line and edge of highwall). Operator should show calculations or other appropriate information to demonstrate that there is adequate materials in backfilling and grading to meet the requirements for final slope.

Overburden may be backfilled into areas within the pit, but not for the purpose of achieving 3:1 slopes along pit highwalls. Slopes in the overburden surrounding the pit will be cut slopes to 3:1 gradient.

9. Describe the plan for revegetation or other surface treatment of affected area(s). The revegetation plan shall include but not be limited to the following: (a) planned soil test; (b) site preparation and fertilization; (c) seed or plant selection; (d) rate of seeding or amount of planting per acre; (e) maintenance.

Vulcan will follow soil test, seed bed preparation, seed mix selection, soil amendments (fertilizer, lime, growth stimulants, etc.), cover and seeding rates based upon SC DOT's *Supplemental Technical Specification (SC-M-810-2(04/11)) for Seeding.*

Revegetated sites will be maintained with periodic inspections to detect areas with significant erosion, seed germination failure or significant plant die-off. Site will be inspected after significant storm events to detect washouts or gullies in planted areas and repaired as necessary.

10. Provide, as a separate document, a closure plan of the mine and permitted facilities to prevent a release of contaminants from being harmful to the environment. A closure plan is not necessary for all mines, but is required where the possibility exist for (a) acid rock drainage; (b) where the National Pollutant Discharge Elimination Systems (NPDES) Permit have discharge limitation parameters other than pH and Total Suspended Solids (TSS); (c) chemically treated tailings or stockpiles (excludes fertilizer or lime for revegetation purposes).

Reclamation for the Lexington Quarry will not require a closure plan. A) The granite may contain minor amounts of pyrite as an accessory mineral, but not in quantities to create acid mine drainage. B) This quarry qualifies for coverage under the *NPDES General Permit for Discharges Associated with Nonmetal Mineral Mining Facilities (SCG-730000)* with no additional parameters other than pH and TSS. C) NO chemicals will be used in the mining or process (i.e., leaching agents, acids, etc.). However, coagulants may be used as approved by DHEC to increase the settling efficiency of suspended solids from waste water discharges to Waters of the State or internally on recycled process wash water.

11. Method of control of contaminants and disposal of mine waste soil, rock, mineral, scrap, tailings, slimes, and other material directly connected with the mining, cleaning, and preparation of mineral substances mined and includes all waste materials deposited on or in the permit area from any source.

Fine materials ("fines") created from processing granite consist of very small size rock fragments.. These fines will be accumulated in the clarification ponds of the wash circuit and periodically removed and stockpiled. The granite fines, once dried, will be either commingled in overburden storage areas for long term reclamation, sold as a product or graded to 3:1 slope or less, covered in topsoil and vegetated.

12. Method of reclaiming settling and/or sediment ponds.

Settling and/or sediment ponds will not be removed from service and reclaimed until all soils within the sediment pond drainage are stabilized with vegetation and erosion controlled. Several temporary sediment basins located in the pit area will be mined out as the pit advances, and stormwater can be efficiently routed and contained in the pit. Sediment basins receiving water from overburden storage areas will remain in place and be converted for "post-mine development" as detention ponds.

13. Describe method of restoration or establishment of stream channels, stream banks and site drainage to a condition minimizing erosion, siltation and other pollution.

The identified wetlands within the mine permit area will be avoided where possible; and, if not possible to avoid, the direct impacts will be minimized to the degree practicable. Where wetlands must be directly impacted, the loss of wetlands will be mitigated following prescribed US Army Corps of Engineers' (USACE) procedures. Avoided wetlands will be protected with a 75 foot wide upland buffer. Wetlands will be restored pursuant to a Section 404 permit to be issued by the USACE.

14. What are the maintenance plans to insure that the reclamation practices established on the affected land will not deteriorate before released by the Department?

Areas that have undergone final reclamation practices will be maintained through periodic inspections and conducting any necessary repairs in a timely manner.

15. For final reclamation, submit information about practices to provide for safety to persons and to adjoining property in all excavations. Identify areas of potential danger (vertical walls, unstable slopes, unstable surface on clay slimes, etc.) and provide appropriate safety provisions. These provisions can include but are not limited to setbacks, fencing, signs, benching, guardrails and boulders.

The following mine segments will be reclaimed to provide safety to persons and adjoining areas.

Highwalls -- Any portion of exposed granite within the pit area with vertical highwalls that cannot be sloped to a 3h:1v gradient and in excess of 10 feet in height will be fenced.

Unstable Slopes -- All unconsolidated soils, e.g., saprolite overlying hard rock and overburden storage areas will be sloped to 3h:1v gradient or less and vegetated. Granite highwalls are inherently stable. However, any unstable boulders or zone near the saprolite overburden will be removed to ensure miner safety and for long term stability.

16. **What provisions will be taken to prevent noxious, odious, or foul pools of water from collecting and remaining on the mined area? For mines to be reclaimed as lakes or ponds, provide supporting information that a minimum water depth of four (4) feet on at least fifty percent (50%) of the pond surface area can be maintained.**

The final pit will be reclaimed as a pond/lake and will meet the above referenced regulatory requirement for sufficient depth. Sediment basins established to trap sediment in stormwater runoff resulting from mine construction and operation will be evaluated during reclamation to determine if they are suitable to convert to freshwater ponds that will meet the regulatory requirement. Sediment basins not converted to ponds will be removed, and soil stabilized by grading and revegetation to prevent noxious pools of water from forming. Areas of the affected land not reclaimed to ponds will be properly graded to prevent unwanted pools of water from collecting and to prevent foul water from forming.

17. **Identify any structures (e.g. buildings, roads) that are proposed to remain as part of final reclamation. Provide justification for leaving any structures.**

The office building and other support buildings may be left upon final reclamation. Also, some of the haul roads may be left to provide access to the property. All areas will be sloped and stabilized to prevent erosion and control sediment. Final justification for allowing structures or roads to remain as part of final reclamation will be provided at the end of mining when the post reclamation use of the property is determined. Temporary haul roads that are exempt under the Section 404 permit will be removed as part of final reclamation.

18. Attach <u>two (2)</u> copies of a map of the area (referred to as the RECLAMATION MAP) that shows the reclamation practices and conservation practices to be implemented. The following should be shown:

A. The outline of the proposed final limits of the excavation, during the number of years for which the permit is requested.

B. The approximate final surface gradient(s) and contour(s) of the area to be reclaimed. This would include the sides and bottoms of mines reclaimed of ponds and lakes.

C. The outline of the tailings disposal area.

D. The outline of disposal areas for spoil and refuse (exclusive of tailings ponds).

E. The approximate location of the mean shore line of any impoundment or water body and inlet and/or outlet structures which will remain upon final reclamation.

F. The approximate locations of access roads, haul roads, ramps or buildings which will remain upon final reclamation.

G. The approximate locations of various vegetative treatments.

H. The proposed locations of re-established streams, ditches or drainage channels to provide for site drainage.

I. The proposed locations of diversions, terraces, silt fences, brush barriers or other Best Management Practices to be used for preventing or controlling erosion and off-site siltation.

J. Proposed locations of the measures to provide safety to persons and adjoining property.

K. Segments of the mine that can be mined and reclaimed as an ongoing basis.

L. The boundaries of the permitted area.

M. The boundaries of the affected area for the anticipated life of the mine.

N. The boundaries of the 100-year floodplain, where appropriate.

O. Identify sections of mine where the final surface gradient will be achieved by grading and/or backfilling.

P. A legend showing the name of the applicant, the name of the proposed mine, the north arrow, the county, the scale, the date of preparation and the name and title of the person who prepared the map.

THE REQUIRED RECLAMATION MAP SHALL HAVE A NEAT, LEGIBLE APPEARANCE AND BE OF SUFFICIENT SCALE TO CLEARLY SHOW THE REQUIRED INFORMATION LISTED ABOVE. THE BASE FOR THE MAP SHALL BE EITHER A SPECIALLY PREPARED LINE DRAWING, AERIAL PHOTOGRAPH, ENLARGED USGS TOPOGRAPHIC MAP OR A RECENTLY PREPARED PLAT. RECLAMATION MAP SHOULD BE THE SAME SCALE USED FOR THE SITE MAP.

IV. SCHEDULE FOR IMPLEMENTATION OF CONSERVATION AND RECLAMATION PRACTICES

19. As stated in Section 48-20-90 of the S.C. Mining Act, reclamation activities, to the extent feasible, must be conducted simultaneously with mining operations. Identify which areas or segments of the mine are <u>not</u> feasible to reclaim simultaneously with mining. Provide reasons why reclamation cannot proceed simultaneously with mining in these areas.

Quarries are not feasible to conduct reclamation simultaneously with mining. Typically the pit, plant area and overburden storage areas are active throughout the mine life of a quarry.

20. Section 48-20-40(16)(l) of the S.C. Mining Act requires a, "time schedule, including the anticipated years for completion of reclamation by segments". This time schedule should meet the requirements of Section 48-20-90 of the Mining Act.

SCHEDULE FOR IMPLEMENTING CONSERVATION AND RECLAMATION PRACTICES

Conservation & Reclamation Practices	Segment or Area	Planned		*Applied		Notes
		Amount	Year	Amount	Month/Year	
Locate Permit Boundary Buffers and Setbacks	Mine Permit Area	195.6 ac	2016			
Locate & establish 75' upland wetland buffers for wetlands NOT to be impacted	Plant Expansion Area		2016			
Locate and mark SHPO Site 38LX654 & establish 50' protective buffer	West of Windmill Rd	20 ac	2016			
Locate and mark SHPO Site 38LX652 & establish 50' protective buffer	East of Windmill Rd	1.7 ac	2016			
Locate and mark Pit Phase I Boundary	Phase I Pit	ac	2016			Initial Pit Development
Construct temporary Sediment Ponds	Phase I Pit		2016			Initial Pit Development
Establish brush barriers and other spot sediment control (i.e., silt fence, etc.) where necessary	Pit Phase I		2016			
Construction site for overburden storage area -south	Ovbn - South	52.4 ac				
Construct Sediment Pond 1; Establish diversions, chk dams, etc.	Ovbn South		2016			Initial Mine Construction
Construct Sediment Pond 2; Establish diversions, chk dams, etc.	Ovbn South		2016			Initial Mine Construction
Establish brush barriers and other spot sediment control (i.e., silt fence, etc.) where necessary	Ovbn South		2016			
Construct perimeter berm as shown in Mine Map in Mine Permit Area - Vegetate pursuant to Rec Plan	Setback Area	35.1 ac.	2016/17			Initial Mine Construction
Establish brush barriers and other spot sediment control (i.e., silt fence, etc.) where necessary	Noise Berm					
Construct Plant site - Establish brush barriers and other spot sediment control (i.e., silt fence, etc.) where necessary	Process Plant & Expansion	63.3 ac.	2017			
Overburden revegetated after placement, as soon as feasibly possible, to increase sediment control efficiency	Ovbn South		Ongoing			Overburden is periodically stripped from pit as mining advances.

AA – Affected Area; BMPs – Best Management Practices; Fert. – Fertilize; PL – Property Line; SB – Sediment Basin; ST – Sediment Traps SW – Stormwater; TS – Topsoil; WL – Wetlands;

* Completed by the Department

20. Section 48-20-40(16)(l) of the S.C. Mining Act requires a, "time schedule, including the anticipated years for completion of reclamation by segments". This time schedule should meet the requirements of Section 48-20-90 of the Mining Act.

SCHEDULE FOR IMPLEMENTING CONSERVATION AND RECLAMATION PRACTICES

Conservation & Reclamation Practices	Segment or Area	Planned		*Applied		Notes
		Amount	Year	Amount	Month/Year	
Locate and mark Pit Phase II Boundary	Phase II Pit	ac	TBD			
Construct Temporary Sediment Ponds (If needed)	Phase II Pit		TBD			
Construct Haul Road and Small Creek Crossing	Future Impact Haul Road		TBD			Modify Mine Permit prior to mining in this area
Establish brush barriers and other spot sediment control (i.e., silt fence, etc.) where necessary	Future Impact Haul Road		TBN			Modify Mine Permit prior to mining in this area
Construction site for overburden storage area -west	Future Impact Ovbn - West	45.1 ac	TBN			Modify Mine Permit prior to mining in this area
Construct Sediment Pond; Establish diversions, chk dams, etc.	Future Impact Ovbn - West		TBD			Modify Mine Permit prior to mining in this area
Construct Sediment Pond; Establish diversions, chk dams, etc.	Future Impact Ovbn - West		TBD			Modify Mine Permit prior to mining in this area
Establish brush barriers and other spot sediment control (i.e., silt fence, etc.) where necessary	Future Impact Ovbn - West		TBN			Modify Mine Permit prior to mining in this area
Construction site for overburden storage area -north	Future Impact Ovbn - North	24.2 ac	TBN			Modify Mine Permit prior to mining in this area
Construct Sediment Pond; Establish diversions, chk dams, etc.	Future Impact Ovbn - North		TBD			Modify Mine Permit prior to mining in this area
Establish brush barriers and other spot sediment control (i.e., silt fence, etc.) where necessary	Future Impact Ovbn - North		TBN			Modify Mine Permit prior to mining in this area
Final Reclamation - grade 3:1, topsoil, fertilize & revegetate cut slope around pit w/permanent vegetation	Phase I & II Pit	Various	Ongoing			Where cut slope is final and will not be disturbed by future mining.
Final Reclamation - grade 3:1, topsoil, fertilize & revegetate w/permanent vegetation	Ovbn - South	Various	Ongoing			Once overburden reaches final elevation
Remove plant equipment, stockpiles - grade 3:1, topsoil, fertilize & revegetate w/permanent vegetation	Process Plant		End of Mining			
Allow pit to fill with water to final pool elevation	Pit		End of Mining			
Remove all equipment from site, remove all petroleum products, remove scrap materials, etc,	Permit Area		End of Mining			
Monitor vegetation growth, repair/reseed as necessary	Affected area	2	End of Mining			Continue through 2-yrs after mining.

AA – Affected Area; BMPs – Best Management Practices; Fert. – Fertilize; PL – Property Line; SB – Sediment Basin; ST – Sediment Traps SW – Stormwater; TS – Topsoil; WL – Wetlands;

* Completed by the Department

1) you, the operator, must file an application to modify the reclamation plan in the event actual reclamation varies from the set forth hereinabove, and

2) if at any time it appears to the Department that the activities under the reclamation plan are failing to achieve the purposes and requirements of the S.C. Mining Act, the Department may modify the RECLAMATION PLAN in accordance to Section 48-20-150.

Elliott Botzis
Signature of Applicant/Operator or his Authorized Representative

Elliott Botzis
Printed Name of Applicant/Operator or his Authorized Representative

Vice President and General Manager
Title

11-02-2015
Date

Department Use Only

Permit No. _____ Date Application Approved _____ Date Bond Rec'd_____

Bond Amount_____ Blanket or Single Bond Permit Issuance Date_____

ACTION TAKEN ON THIS RECLAMATION PLAN

_____ Approved _____ Denied _____ Approved with Additional Terms and Conditions

By:_____
DIVISION DIRECTOR

Date:_____